

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Petition for Rulemaking to Update the Commission's Rules for Access to Support the Transition from TTY to Real-Time Text Technology, and Petition for Waiver of Rules Requiring Support of TTY Technology)	GN Docket No. 15-178
)	
Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications)	PS Docket No. 11-153
)	
Framework for Next Generation 911 Deployment)	PS Docket No. 10-255
)	
IP-Enabled Services)	WC Docket No. 04-36
)	
Telecommunications Relay Services and Speech-to-Speech Services for Individuals with Hearing and Speech Disabilities)	CG Docket No. 03-123
)	
Implementation of Sections 716 and 717 of the Communications Act of 1934, et al.)	CG Docket No. 10-213
)	

**COMMENTS OF CONSUMER GROUPS ON PETITION OF AT&T REGARDING THE
SUBSTITUTION OF REAL-TIME TEXT FOR TEXT TELEPHONE TECHNOLOGY**

Telecommunications for the Deaf and Hard of Hearing, Inc., through counsel, American Association of the Deaf-Blind, Association of Late Deafened Adults, California Coalition of Agencies Serving the Deaf and Hard of Hearing, Inc., Cerebral Palsy and Deaf Organization, Deaf Seniors of America, Hearing Loss Association of America, National Association of the Deaf, and the Rehabilitation Engineering Research Center on Telecommunications Access (collectively, the "Consumer Groups") respectfully submit these Comments regarding the

Petition for Rulemaking¹ and Petition for Waiver² (collectively, the “Petitions”) filed by AT&T Services, Inc. (AT&T) in the above-captioned dockets.

I. BACKGROUND

AT&T has filed two Petitions related to the Commission’s rules requiring support for text telephone (TTY) technology.³ In a Petition for Rulemaking, AT&T requests that the Commission initiate a rulemaking proceeding to “recognize [real-time text] as a regulatory equivalent to and replacement for TTY for newly-deployed IP-based voice services.”⁴ Specifically, AT&T petitions the Commission to “determine that providing RTT functionality meets the accessibility requirements in Commission rule Section 20.18(c) for 911 calling and Section 64.603 for 711 calling, as well as any other regulatory or statutory accessibility obligations, provided that the implementation is interoperable with (1) TTY (TIA-825A/ITU v.18 standard) until TTY is sunset, and (2) RTT with other [Voice over Internet Protocol] networks.”⁵ In a concurrently filed Petition for Waiver, AT&T seeks a temporary waiver of Section 20.18(c), Section 64.603, and any other rules requiring the support of TTY technology as an accessibility solution “for AT&T’s new IP-based voice services” until “the later of the date

¹ See Petition of AT&T Services, Inc. for Rulemaking, PS Docket Nos. 11-153, 10-255, WC Docket No. 04-36, CG Docket Nos. 03-123, 10-213 (filed June 12, 2015) (Petition for Rulemaking).

² See Petition of AT&T Services, Inc. for Waiver, PS Docket Nos. 11-153, 10-255, WC Docket No. 04-36, CG Docket Nos. 03-123, 10-213 (filed June 12, 2015) (Petition for Waiver).

³ See 47 C.F.R. § 20.18(c); 47 C.F.R. § 64.603; *see also* 47 C.F.R. §§ 6.3(b), 7.3(b), 14.21(d).

⁴ Petition for Rulemaking at 5.

⁵ Petition for Rulemaking at 5-6.

that AT&T deploys RTT (expected 2017) and the date that the new RTT rules become effective.”⁶

The Petitions generally maintain that RTT will “provide superior functionality to TTY and deliver enhanced, interoperable disability access,” and that TTY is “obsolete, offers inferior functionality and features, and does not operate reliably on newer Voice over Internet Protocol (“VoIP”) platforms.”⁷ Accordingly, AT&T requests that the Commission “establish RTT as an alternative to TTY” as TTY is “phase[d]-out” in order to enable “optimized accessibility solutions (e.g., either TTY or RTT) across all services to the benefit of consumers with hearing and speech disabilities.”⁸ AT&T also requests a temporary waiver to allow it to “introduce cutting-edge VoIP services while remaining in compliance with Commission accessibility rules.”⁹

II. THE CONSUMER GROUPS SUPPORT AT&T’S REQUEST THAT THE COMMISSION INITIATE A RULEMAKING PROCEEDING TO RECOGNIZE REAL-TIME TEXT AS A REGULATORY ALTERNATIVE TO TEXT TELEPHONE TECHNOLOGY

The Consumer Groups support and appreciate AT&T’s efforts to expand access to real-time text technology. RTT is a viable substitute for TTY, which is slower and less flexible than the more nimble and functional RTT. Recognizing RTT as a regulatory alternative to TTY will promote the development and deployment of this consumer-preferred technology by service providers and manufacturers, and the Consumer Groups encourage the Commission to conduct the rulemaking requested by AT&T. If the Commission decides to instead issue a declaratory

⁶ Petition for Waiver at 4, 5, 9.

⁷ Petition for Waiver at 2, 6; Petition for Rulemaking at 4.

⁸ Petition for Rulemaking at 12.

⁹ Petition for Waiver at 6.

ruling that RTT is an acceptable alternative to TTY rather than conduct a rulemaking, or if the Commission decides to issue that clarification now and then conduct a rulemaking, the Consumer Groups would support those approaches as well. However, it is critical that a common standard – which at this point appears to be RFC 4103 – is clearly specified for all networks that can support it, including all SIP or IMS based networks, and for all network and terminal devices connected to these networks, and that RTT is available such that the user can use RTT-only, RTT simultaneous with Voice, or Voice-only. Networks that cannot support the common required standard must have a reliable common RTT standard that works with voice communication on that network, and must transcode to a specified common RTT standard when they connect to other networks.

Additionally, AT&T has proposed two conditions to facilitate a smooth transition to RTT. The conditions require a carrier's RTT service to be: (1) backwards-compatible with TTY, and (2) interoperable with RTT on other VoIP networks. The Consumer Groups agree with these conditions.

The Consumer Groups also acknowledge AT&T's concern that the limitations of TTY on an IP platform make carrier compliance with the Commission's rules requiring support for TTY difficult on IP-based networks. At the same time, however, a waiver potentially limits the accessibility of next-generation voice networks to deaf, deaf-blind, and hard of hearing persons and so should be held to the minimum duration necessary for carriers to deploy RTT technology. The Consumer Groups therefore support the waiver generally, but submit that the Commission should consider setting the waiver to expire at the later of the date that the new RTT rules become effective or of a date-certain, which would be determined with input from and in

consultation with AT&T (as well as any other carriers to whom a waiver is granted),¹⁰ the deaf and hard of hearing community, device manufacturers, and other interested shareholders.

A. Real-Time Text is a Viable Alternative to Text Telephone Technology

Real-time text technology combines the functionalities of TTY with digital Internet Protocol technologies, and generally offers a superior accessibility solution on IP networks. While TTY was a widely-used accessibility technology for many years after it was first introduced in 1964, its users have largely migrated to newer technologies – including RTT – except on the PSTN where it is still the only text technology that works. Indeed, the Commission has recognized that “[t]he disabilities community considers TTY an antiquated technology with technical and functional limitations.”¹¹ As IP networks have proliferated, the limitations of TTY have become clear to users on IP networks and they have come to appreciate the advantages of native IP accessibility solutions like RTT.

Namely, use of RTT technology does not require the user to buy and connect a separate, cumbersome TTY device; RTT is available on smartphones, tablets, and any other Internet-connected device that has a keyboard and a screen. This makes RTT a highly mobile accessibility solution that is already-available to users with one of those devices. Additionally, TTY devices are not readily obtainable everywhere, and purchasing one is an extra cost to the user that they would not incur buying a smartphone or other RTT-capable device.

¹⁰ Although AT&T’s Petition for Waiver would apply only to AT&T, the Commission’s July 24 Public Notice appears to contemplate the possibility of a broader waiver “for the industry as a whole.” FCC, *Request for Comment on Petition for Rulemaking to Update the Commission’s Rules for Access to Support the Transition from TTY to Real-Time Text Technology, and Petition for Waiver of Rules Requiring Support of TTY Technology*, GN Docket No. 15-178, Public Notice, at 3 (July 24, 2015).

¹¹ *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, PS Docket Nos. 11-153, 10-255, Notice of Proposed Rulemaking, 26 FCC Rcd 13615, 13624 ¶ 26 (2011).

Moreover, real-time text was designed to be operated on IP networks, and so does not experience the same reliability and transmission issues that impact TTY when operating on an IP network. For example, as noted by AT&T, TTY tones can appear as an echo when transmitted over IP networks and so may be degraded by echo cancellation techniques used to improve the quality of IP-based voice communications.¹² Additionally, TTY is subject to packet loss that reduces the quality of the communication, and available compression techniques can actually distort TTY tones.¹³ These limitations can make the use of TTY on an IP network a frustrating user experience, but also can present a real danger in an emergency, particularly if the person using TTY is unable to communicate effectively.

Critically, in addition to offering a number of advantages over TTY, RTT maintains the functionalities of TTY on IP platforms. Like TTY, RTT is transmitted character-by-character, allowing for conversational, real-time communication. Rather than converting typed letters into audio tones, RTT transmits the typed text to the recipient instantaneously during a phone call. This allows for speech to be intermixed with text, enabling a greater range of possibilities for communication, including text in one direction with speech in the other, and speech in parallel with text for captioned-telephony, or even just text supplementing speech for difficult to hear words, addresses, long numbers, etc.

RTT also offers advantages to other IP-based communications mediums like text messaging and email, which transmit communications in blocks and do not allow for the intermixing of speech with text. Unlike text messaging or email, RTT is a conversational communications technology that facilitates real-time interaction for users.

¹² Petition for Rulemaking at 7.

¹³ *Id.*

For these reasons, the Consumer Groups agree with AT&T that real-time text is a viable alternative to TTY for text telephony. Establishing RTT as a regulatory alternative to TTY will facilitate the development and deployment of RTT on IP networks, thereby expanding the availability of this useful communications service. The Consumer Groups therefore support AT&T's Petition for Rulemaking, and request that the Commission commence this important proceeding to establish RTT as an alternative to TTY under its rules.

If the Commission decides to issue a declaratory ruling or other clarification stating that RTT is a regulatory alternative to TTY either pending a rulemaking or in lieu of a rulemaking, the Consumer Groups would support those approaches. Should the Commission decide to do so, the Consumer Groups ask that it also clarify that to be considered a viable regulatory alternative, RTT services must utilize the RFC 4103 standard on SIP, IMS and other RFC 4103 compatible networks – and that any other forms of RTT used in other networks be reliable and convert to 4103 where they connect to RFC 4103 compatible networks.¹⁴ Adoption of that standard is necessary to ensure interoperability of real-time text services. Additionally, adoption of the RFC 4103 standard today does not preclude the adoption of other standards in the future. New RTT standards can be introduced the same way new voice codecs are introduced – in parallel until all equipment supports both.

B. The Commission Should Require that RTT Services Be Interoperable With TTY Services and with RTT On Other VoIP Networks

AT&T is proposing that the Commission revise its rules requiring support for TTY so as to recognize RTT as a viable substitute for TTY as long as the RTT service is interoperable with: “(1) TTY (TIA-825A/ITU v.18 standard) until TTY is sunset and (2) RTT with other VoIP

¹⁴ See The Internet Society, *RTP Payload for Text Conversation* (2005), available [here](#).

networks.”¹⁵ The Consumer Groups support these conditions, which will ensure that existing accessibility solutions are not compromised, and encourage the Commission to adopt those conditions as tentative conclusions in the proposed rulemaking, or in a declaratory ruling if the Commission decides to take that approach. TTY is the only technology that works on the PSTN, and while TTY is not commonly used today except on the PSTN, some deaf, deaf-blind, and hard of hearing persons still rely on TTY technology, including persons who have kept their TTY devices for making emergency calls. Therefore, although TTY will ultimately be replaced altogether by RTT, it still remains vital that the two services be interoperable. It is also critical that, as TTY continues to be phased out and RTT is universally adopted, RTT services be interoperable regardless of the network on which those services are operating. The Consumer Groups, therefore, encourage the Commission to adopt the conditions proposed by AT&T.

Furthermore, the RTT rulemaking must specify RFC 4103 as the standard for SIP, IMS and other RFC 4103 compatible networks in order to allow all manufacturers and other networks to have a stable and known standard on these core networks to build to and be compatible with.

C. The Consumer Groups Generally Support AT&T’s Request for Waiver But Ask That the Commission Consider Limiting Such a Waiver to the Date the New RTT Rules Take Effect or a Date-Certain

The Consumer Groups recognize that TTY, a technology developed well before the advent of IP-based communications networks, can be unreliable or even nonfunctional when used on an IP platform. As discussed above, certain techniques and technologies used on IP networks can degrade or distort TTY communications.¹⁶ The Consumer Groups also recognize the nationwide transition that is underway from legacy PSTN to IP-based voice networks, and so

¹⁵ Petition for Rulemaking at 6.

¹⁶ See Petition for Rulemaking at 7.

understands AT&T's concern that the Commission's rules requiring support for TTY – a technology that is difficult to reliably support on IP networks – present an obstacle and a potential source of liability for carriers deploying Wi-Fi calling and Voice over LTE (VoLTE) systems.

The Consumer Groups therefore generally support AT&T's request that the Commission temporarily waive the rules requiring support for TTY for “AT&T's new IP-based voice services.”¹⁷ In The Consumer Groups' view, the deaf and hard of hearing community is not served by rules mandating support of *only* TTY (without an option for RTT) on IP-based networks. TTY is sparsely used on IP networks and, to the extent that TTY quality is limited by characteristics of IP networks, rules mandating support for TTY on IP present a risk of frustrating users or, much worse, rendering users unable to communicate effectively during an emergency.

That being said, a waiver potentially limits the accessibility solutions available on next-generation voice networks. While the waiver is in effect, users might not have access to either TTY or RTT. Therefore, any waiver of the Commission's rules requiring support for TTY on IP networks should be limited in duration to only what is absolutely necessary for carriers to implement RTT on the networks being deployed. Implementations of RTT technologies are already widely available,¹⁸ and the Consumer Groups anticipate that carriers and the Commission will be able to estimate the date by which carriers can reliably deploy RTT services; for example, AT&T stated that it expects to have RTT deployed by 2017.¹⁹ The Consumer

¹⁷ Petition for Waiver at 4.

¹⁸ See RERC Notice of Ex Parte, GN Docket No. 13-5, 26-30 (Dec. 5, 2013) (RERC-TA R1 proposal on a common real-time text proposal), *available* [here](#).

¹⁹ Petition for Waiver at 9.

Groups therefore ask that the Commission, in consultation with AT&T (as well as any other carriers that may be granted a waiver of these rules), device manufacturers, and the deaf and hard of hearing community, establish a date-certain by when RTT is anticipated to be widely available on IP networks. The waiver would then terminate on that date unless the proposed RTT rules allowing service providers to substitute RTT for TTY have not yet become effective, in which case the waiver would terminate on that date. It is essential that any such deadline carry with it a stringent and rapidly escalating enforcement mechanism that discourages noncompliance with the rules by the end of the waiver period, given the impact on deaf, deaf-blind, and hard of hearing consumers.

Finally, the Consumer Groups request that the Commission grant the waiver requested only if it also conducts the rulemaking proceeding requested by AT&T. If the Commission grants the waiver, but does not conduct the rulemaking, then consumers could potentially be left without access to either TTY (due to the waiver) or RTT (due to the Commission declining to conduct the rulemaking). RTT, like its predecessor TTY before it, is a critical communications technology for the deaf, deaf-blind, hard of hearing, and speech disability communities and the need for service providers to support RTT on next-generation voice networks cannot be understated.

III. CONCLUSION

Real-time text technology will replace TTY on next-generation, IP-based voice networks. As the Consumer Groups believe that establishing RTT as a regulatory alternative to TTY on IP networks will encourage the development and deployment of important RTT services, the Consumer Groups support AT&T's request that the Commission initiate such a rulemaking. If the Commission decides to issue a clarification that RTT is an acceptable alternative to TTY pending a full rulemaking, or in lieu of a rulemaking, the Consumer Groups would support those

approaches and ask that the Commission also clarify that RTT services must use the RFC 4103 standard on any RFC 4103 compatible networks in order to be considered an acceptable substitute. The Consumer Groups also ask that the Commission adopt AT&T's proposed interoperability conditions to ensure that existing accessibility solutions are not impaired. Finally, acknowledging that the unreliability of TTY technology on an IP platform presents an obstacle to the deployment of IP-based voice networks and a risk to users, the Consumer Groups generally support AT&T's request for waiver, but ask that the Commission – in consultation with AT&T and other carriers, members of the deaf and hard of hearing community, device manufacturers, and other interested shareholders – consider establishing a date certain by which the waiver will expire with strong and rapidly escalating enforcement in order to ensure the timely adoption of real-time text technology.

Respectfully submitted,



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